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B74-10056

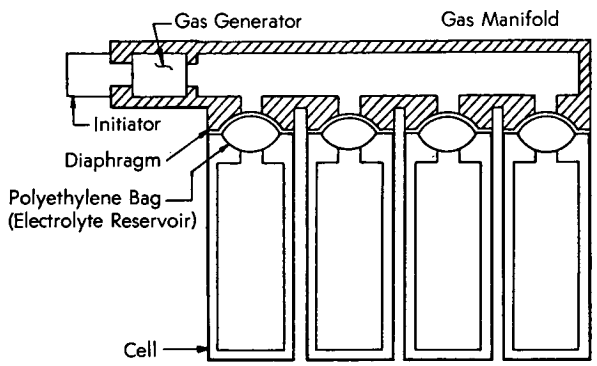
NASA TECH BRIEF

Ames Research Center

Battery Activation System

The problem:

To design a pyrotechnically-activated battery which cannot be quickly discharged by current conduction paths in a common gas manifold.



The solution:

Supply electrolyte to each cell from separate containers.

How it's done:

The electrolyte distribution arrangement in the improved battery is shown in the diagram. An initiator is fired to set off the gas generator; the gas flows into a manifold and as the gas pressure increases, chlorotrifluoroethylene diaphragms transfer the force to polyethylene bags filled with electrolyte. At peak manifold pressure, the small membrane at the base of each polyethylene bag is ruptured, allowing electrolyte to flow into the cells. Because no wet path is available for conduction between cells, the activated battery is not self-discharged.

Notes:

1. Material thickness and chamber volumes must be carefully selected for reliable operations.
2. No additional documentation is available. Specific questions, however, may be directed to:
   Technology Utilization Officer
   Ames Research Center
   Moffett Field, California 94035
   Reference: B74-10056

Patent status:

NASA has decided not to apply for a patent.

Source: Charles Sollo, David L. Smith, and Vernon P. King of McDonnell Douglas Corporation under contract to Ames Research Center (ARC-10832)

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